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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,798	10/06/2004	Chiu-Hao Cheng		5797

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ZEROPLUS TECHNOLOGY CO., LTD.
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TAIPEI,
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EXAMINER	
SZABO, STEPHEN J	
ART UNIT	PAPER NUMBER
4156	

MAIL DATE	DELIVERY MODE
03/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/711,798	CHENG ET AL.	
	Examiner	Art Unit	
	STEPHEN SZABO	4156	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 1, 6-8, 10, 15-17, 19, and 20 contain the limitation "game machine main unit (system main unit)." It is unclear whether the applicant is referring to a game machine main unit or a system main unit. For purposes of prosecution, it shall be construed as being directed towards a game machine main unit.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,926,168 to Fan.

5. Regarding claim 1, Fan teaches a photographic pointer positioning system comprising a game machine main unit, a display screen connected to said game machine main unit for video output, and a photographic pointing device connectable to said game machine main unit, said photographic pointing device comprising a control

circuit, a communication interface, a camera, at least one reference sign, a computing unit, an image processing circuit, and a set of buttons, wherein: said control circuit controls the operation of said camera and receives image signal from said camera; said camera is controlled by said control circuit to take the picture of a whole display area of said display screen and to transmit the obtained image signal to said control circuit; said at least one reference sign is respectively mounted in said display screen for reference in scan and recognition processing to be done by said image processing circuit to accelerate the processing speed; said image processing circuit is controlled by said control circuit to process the image signal received from said camera through scan and recognition processes and to send the processed data back to said control circuit; said computing unit is controlled by said control circuit to calculate the coordinate value of the aiming point of said camera at said display screen subject to the data of the image signal obtained from said image processing circuit and to output the calculated coordinate value to said control circuit; said communication interface is controlled by said control circuit to transmit the calculated coordinate value of the aiming point of said camera at said display screen to said game machine main unit for further processing; said buttons are respectively electrically connected to said control circuit for operation by user (column 17, lines 33-46 – the imaging device can also be a video camera – column 17, line 48 – the determined position is inputted into a computer or a game machine - column 19, lines 5-6 – One (or several) selection button(s) [...] is added to the pointing means [...] to emulate the action of mouse buttons s – column 19, lines 24-26 – an additional electron gun to create an "invisible" color as a reference to eliminate the

dark spot problem in many light guns, thereby increasing the processing speed in an area of darkness – column 21, lines 33-65).

6. Regarding claim 2, Fan teaches the photographic pointer positioning system as claimed in claim 1, wherein said at least one reference sign is respectively formed of an illuminator (see argument in paragraph 5 supra).

7. Regarding claim 3, Fan teaches the photographic pointer positioning system as claimed in claim 2 (see argument in paragraph 6 supra), wherein said illuminator is a light emitting diode, bulb or any suitable light emitting materials (see argument in paragraph 5 supra).

8. Regarding claims 4 and 5, Fan teaches the photographic pointer positioning system as claimed in claim 1 (see argument in paragraph 5 supra), wherein said at least one reference sign is respectively installed in the border area of said display screen around said display area or installed within said display area of said display screen (one of ordinary skill in the art at the time the invention was made would know to try to install the reference sign either within the border or within the display area itself since there are only a finite number of locations that would be appropriate for a reference sign to be installed so that it would be available for use within the capture area of the system).

9. Regarding claim 6, Fan teaches the photographic pointer positioning system as claimed in claim 1 (see argument in paragraph 5 supra), wherein said game machine main unit is a computer system, big game machine, TV game machine or computer terminal system (see argument in paragraph 5 supra).

10. Regarding claims 7 and 8, Fan teaches the photographic pointer positioning system as claimed in claim 1 (see argument in paragraph 5 supra), wherein said communication interface is connected to said game machine main unit by a signal line for wire communication with said game machine main unit or wherein said communication interface is a wireless communication interface for wireless communication with said game machine main unit (column 24, lines 27-35).

11. Regarding claim 9, Fan teaches the photographic pointer positioning system as claimed in claim 1 (see argument in paragraph 5 supra), wherein said photographic pointing device provides the functions of an optical mouse, a tablet and a light gun (provide a pointing device that can replace the mouse - column 2, lines 42-43, In a conventional touch screen, the computer command is issued by fingers or other objects touching the screen – column 2, lines 60-62 - one of ordinary skill in the art at the time the invention was made would recognize other objects being a tablet pen for use in a tablet interface – make a pointing device that can be used in game applications, such as, simulation of a game gun which shoot at computer screen. There are already several pointing mechanisms developed for video gun applications, such as light scopes - column 2, line 66-column 3, line 3).

12. Regarding claim 10, Fan teaches a photographic pointer positioning system comprising a game machine main unit, a display screen connected to said game machine main unit for video output, and a photographic pointing device connectable to said game machine main unit, said photographic pointing device comprising a control circuit, a communication interface, a camera, at least one reference sign, and a set of

buttons, wherein: said control circuit controls the operation of said camera and receives image signal from said camera; said camera is controlled by said control circuit to take the picture of a whole display area of said display screen and to transmit the obtained image signal to said control circuit, said at least one reference sign is respectively mounted in said display screen for reference in scan and recognition processing to be done by said game machine main unit to accelerate the processing speed; said communication interface is controlled by said control circuit to transmit the image signal from said camera to said game machine main unit for further scan and recognition processing; said buttons are respectively electrically connected to said control circuit for operation by user; said game machine main unit calculates the coordinate value of the aiming point of said camera at said display screen subject to the image signal received from said camera and outputs the calculated data to said display screen for output (see argument in paragraph 5 supra – The imaging device can output the determined position directly into the computer with properly designed electronics, or it can output the whole image into the computer or a dedicated DSP and use the computer or DSP to calculate the coordinate of the light spot - column 17, lines 39-44).

13. Regarding claim 11, Fan teaches the photographic pointer positioning system as claimed in claim 10 (see argument in paragraph 12 supra), wherein said at least one reference sign is respectively formed of an illuminator (see argument in paragraph 6 supra).

14. Regarding claim 12, Fan teaches the photographic pointer positioning system as claimed in claim 11 (see argument in paragraph 13 supra), wherein said illuminator is a

light emitting diode, bulb or any suitable light emitting materials (see argument in paragraph 7 supra).

15. Regarding claims 13 and 14, Fan teaches the photographic pointer positioning system as claimed in claim 10 (see argument in paragraph 12 supra), wherein said at least one reference sign is respectively installed in the border area of said display screen outside the display area of said display screen or respectively mounted within the display area of said display screen (see argument in paragraph 8 supra).

16. Regarding claim 15, Fan teaches the photographic pointer positioning system as claimed in claim 10 (see argument in paragraph 13 supra), wherein said game machine main unit is a computer system, big game machine, TV game machine or computer terminal system (see argument in paragraph 10 supra).

17. Regarding claims 16 and 17, Fan teaches the photographic pointer positioning system as claimed in claim 10 (see argument in paragraph 13 supra), wherein said communication interface is connected to said game machine main unit by a signal line for wire communication with said game machine main unit or wherein said communication interface is a wireless communication interface for wireless communication with said game machine main unit (see argument in paragraph 11 supra).

18. Regarding claim 18, Fan teaches the photographic pointer positioning system as claimed in claim 10 (see argument in paragraph 13 supra), wherein said photographic pointing device provides the functions of an optical mouse, a tablet and a light gun (see argument in paragraph 11 supra).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,926,168 to Fan in combination with U.S. Patent 6,323,838 to Thanasack et al.

21. Regarding claim 19, Fan and Thanasack teach a photographic pointer positioning processing process used in the photographic pointer positioning system comprising a game machine main unit, a display screen connected to said game machine main unit for video output, and a light gun-like photographic pointing device connectable to said game machine main unit, said photographic pointing device comprising sights, a control circuit, a communication interface, a camera, at least one reference sign, a computing unit, an image processing circuit, and a set of buttons including a firing button, said photographic pointer positioning processing process comprising the steps of: (A) Start; (B) Aiming the sights of said light gun-like photographic pointing device at a center point of the display area of said display screen and then pressing said firing button; (C) Driving said camera to take the picture of the whole display area of said display screen and to send the image signal thus obtained back to said control circuit; (D) Driving said control circuit to send the image signal to said image processing circuit for running scan and recognition processes and then

driving said image processing circuit to send the processed data back to said control circuit; (E) Comparing the processed data obtained from said image processing circuit to the pixels of said camera to obtain the coordinate values of the four corners of the display area of the display screen in the photographed area; (F) Calculating the coordinate value of the center point of the display area of said display screen in the photographed area; (G) Putting the coordinate value of the center point of the display area of said display screen in the photographed area into the coordinate value of the aiming point of said camera; (H) The aiming point of the sight of said light gun-like photographic pointing device, the center point of the display area and the aiming point of said camera are overlapped; (I) End (see argument in paragraph 5 supra and Thanasack column 12, line 49-column 14, line 16 for calibration – Fan teaches - There are already several pointing mechanisms developed for video gun applications, such as light scopes. These mechanisms can be modified and adept to become the operating mechanism of the present remote pointer - Fan column 3, lines 2-5 - and therefore one having ordinary skill in the art at the time the invention was made would know that the invention taught in Thanasack may be implemented in the invention of Fan).

22. Regarding claim 20, Fan and Thanasack teach a photographic pointer positioning processing process used in the photographic pointer positioning system comprising a game machine main unit, a display screen connected to said game machine main unit for video output, and a light gun-like photographic pointing device connectable to said game machine main unit, said photographic pointing device comprising sights, a control circuit, a communication interface, a camera, at least one

reference sign, and a set of buttons including a firing button, said photographic pointer positioning processing process comprising the steps of: (A) Start; (B) Aiming the sight of said light gun-like photographic pointing device at a center point of the display area of said display screen and then pressing said firing button; (C) Driving said camera to take the picture of the whole display area of said display screen and to send the image signal thus obtained back to said control circuit; (D) Driving said control circuit to send the image signal to said game machine main unit through said communication interface; (E) Driving said game machine main unit to run scan and recognition processes subject to the image signal of received from said control circuit; (F) Driving said game machine main unit to compare the processed image signal data to the pixels of said camera so as obtain the coordinate values of the four corners of the display area of said display screen in the photographed area; (G) Driving said game machine main unit to calculate the coordinate value of the center point of the display area of said display screen in the photographed area; (H) Putting the coordinate value of the center point of the display area of said display screen in the photographed area into the coordinate value of the aiming point of said camera; (I) The aiming point of the sight of said light gun-like photographic pointing device, the center point of the display area and the aiming point of said camera are overlapped; (J) End (see argument in paragraphs 21 and 13 supra).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 3,659,284 to Rusch

U.S. Publication 2005/0270494 to Banning

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN SZABO whose telephone number is (571)270-3995. The examiner can normally be reached on Mon-Fri (alternate Fri off) 9 a.m. - 4 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Isabella can be reached on 571-272-4749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dmitry Suhol/
Primary Examiner, Art Unit 3725

Stephen Szabo
Examiner
Art Unit 4156

Notice of References Cited	Application/Control No. 10/711,798	Applicant(s)/Patent Under Reexamination CHENG ET AL.	
	Examiner STEPHEN SZABO	Art Unit 4156	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-3,659,284 A	04-1972	Rusch, William T.	463/3
*	B	US-5,926,168 A	07-1999	Fan, Nong-qiang	345/158
*	C	US-6,323,838 B1	11-2001	Thanasack et al.	345/156
*	D	US-2005/0270494 A1	12-2005	Banning, Erik Jan	353/042
	E	US-			
	F	US-			
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	L	US-			
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